II. CLAIMS

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): Device for continuous evaporation of a high temperature superconductor ~~(13)~~ onto a substrate ~~(7)~~ in a vacuum ~~(6)~~ comprising:

a. a refilling device ~~(5)~~ with a stock of high temperature superconductor material ~~(13)~~;

b. an evaporation device ~~(1)~~ which evaporates the high temperature superconductor material ~~(13)~~ in an evaporation zone by a beam ~~(2)~~ of an energy transferring medium;

c. a conveyor ~~(3)~~ which transports the high temperature superconductor material ~~(13)~~ from the refilling device ~~(5)~~ to the evaporation zone; wherein ~~in a way that~~

d. ~~the high temperature superconductor material (13) delivered to the evaporation zone is evaporated essentially without residues,~~ ~~**characterized in that**~~ ~~wherein~~ the evaporation device is adapted to pre-heat the high-temperature superconductor material in a first part of the evaporation zone by a first energy of the beam of energy transferring medium and to evaporate the pre-heated high-temperature superconductor material in a second part of the evaporation zone by a second energy of the beam of energy transferring medium, wherein said second energy is greater than said first energy.

~~e. the conveyor transports the high temperature superconductor material (13) to the evaporation zone as a granulate (13) with a grain size of 0.05 – 0.5 mm greater than about 0.05 mm and less than about 0.5 mm.~~

Claim 2 (previously amended): Device according to claim 1, further comprising a means to scan the beam of the evaporator in at least one direction over the evaporation zone.

Claim 3 (previously amended): Device according to claim 2, wherein the means scans the beam at a repetition frequency of greater than about 50 Hz and preferably at about 90 Hz.

Claim 4 (previously amended): Device according to claims 1, further comprising a means to first pre–heat and then evaporate the high temperature superconductor material delivered to the evaporation zone by the conveyor.

Claim 5 (currently amended): Device according to claim 4, where the evaporation device comprises at least two power levels ~~(P_1,P_2)~~ for the beam ~~(2)~~, ~~preferably~~ with a narrow transition width ~~(Δx)~~ between the first and the second power level to achieve a linear gradient of ~~the~~ a thickness profile ~~D(x)~~ of ~~the~~ a delivered high temperature superconductor material ~~(13)~~.

Claim 6 (currently amended): Device according to claim 5, wherein the conveying speed of the conveyor ~~(3)~~ can be adjusted to satisfy at least one of the conditions ~~such~~ that ~~the~~ an angle of ~~the~~ a slope α is less than about 20°, ~~<20°~~ and ~~/or~~ the length of the evaporation zone is less than about 10 mm ~~<10 mm~~.

Claim 7 (currently amended): Device according to one of the claims 5 or 6, wherein the beam ~~(2)~~ of the energy transferring medium can be focused in such a way that while scanning it reaches ~~its~~ a minimum width when it is focused approximately ~~located essentially~~ at the upper edge of the slope.

Claim 8 (previously amended): Device according to claim 1, wherein the conveyor and the substrate can be tilted to compensate for an inclined directional pattern of the material evaporating from the conveyer.

Claim 9 (previously amended): Device according to claim 1, wherein the evaporation device comprises an electron beam evaporator which can be modulated.

Claim 10 (previously amended): Device according to claim 1, wherein the high temperature superconductor material is conveyed into the evaporation zone in the shape of a line with a width of greater than about 3 mm and less than about 30 mm.

Claim 11 (previously amended): Device according to claim 1, wherein the conveyor transports the high temperature superconductor material to the evaporation zone as a granulate with a grain size of greater than about 0.1 mm and less than about 0.2 mm.

Claim 12 (previously amended): Device according to claim 1, wherein the conveyor can be cooled and comprises at least one of a rotating turntable, a rotating drum, a vibration conveyor, a conveyor belt, a screw conveyor, and a slide.

Claim 13 (previously amended): Device according to claim 1, wherein the refilling device is designed as a funnel and can be heated.

Claim 14 (previously amended): Device according to claim 1, wherein the refilling device has a separate pumping device.

Claim 15 (previously amended): Device according to claim 14, wherein the refilling device is designed as a funnel which can be heated in a bottom section, and the separate pumping device is designed as a suction pipe which protrudes into the bottom section of the funnel.

Claim 16 (previously amended): Device according to claim 1, wherein the high temperature superconductor material is a mixture of different compounds, so that upon evaporation on temporal average the desired composition of the high temperature superconductor material is deposited.

Claim 17 (previously amended): Device according to claim 1, further comprising a means to supply a gas close to the substrate.

Claim 18 (previously amended): Device according to claim 1, further comprising a means to heat and move the substrate relative to the evaporation zone.

Claim 19 (previously amended): Device according to claim 1, further comprising a means to measure an evaporation rate by atomic absorption spectroscopy.

Claim 20 (currently amended): Device according to claim 19, further comprising a means to partially shade the vapor of the high temperature superconductor material ~~at the location of the~~ where a measuring light beam is located to avoid saturation of the absorption line.

Claim 21 (previously amended): Device according to claim 1, further comprising a second refilling device having source material for an auxiliary layer of the high temperature superconductor film.

Claim 22 (currently amended): Device according to claim 21, further comprising a means ~~to connect~~ for connecting said second ~~at least another~~ refilling device ~~and~~ to the first refilling device, and ~~(5)~~ for holding a stock of high temperature superconductor material ~~(13)~~ sequentially with the conveyor ~~(3)~~.

Claim 23 (previously amended): Method for evaporating a high temperature superconductor coating onto a substrate in a vacuum comprising the steps of:

a. continuously conveying a granulate of a high temperature superconductor material into a evaporation zone; and

b. operating a beam of an energy transferring medium, so that the delivered granulate is evaporated essentially without residues within the evaporation zone, wherein

c. the high temperature superconductor material is conveyed to the evaporation zone as granulate with a grain size of greater than about 0.05 mm and less than about 0.5mm.

Claim 24 (previously amended): Method according to claim 23, wherein the granulate is delivered to the evaporation zone in the shape of a line.

Claim 25 (currently amended): Method according to claim 24, wherein the beam ~~(2)~~ of the energy transferring medium is guided over one end of the trace ~~(4)~~ so that ~~the~~ a trace ~~(4)~~ is scanned approximately ~~essentially~~ across its entire width, as well as ~~and~~ over a small section in the direction of the conveying motion.

Claim 26 (previously amended): Method according to claim 23, wherein the high temperature superconductor is $RBa_2Cu_3O_7$, wherein R is either yttrium or an element having an atomic number between 57 and 71.

Claim 27 (previously amended): Method according to claim 23, using a device comprising:

a. a refilling device with a stock of high temperature superconductor material;

b. an evaporation device which evaporates the high temperature superconductor material in an evaporation zone by a beam of an energy transferring medium;

c. a conveyor which transports the high temperature superconductor material from the refilling device to the evaporation zone in a way that

d. the high temperature superconductor material delivered to the evaporation zone is evaporated essentially without residues, wherein

e. the conveyor transports the high temperature superconductor material to the evaporation zone as a granulate with a grain size of greater than about 0.05 mm and less than about 0.5 mm.